

A PERIPATETIC AUSTRALIAN THRIPS (THYSANOPTERA: PHLAETHRIPIDAE) IN *EUCALYPTUS* SEED CAPSULES

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Abstract

The worldwide spread of *Cartomothrips browni* Stannard from Australia is discussed. Adults and larvae are recorded from seed capsules of *Eucalyptus grandis* in California, USA.

Discussion

The genus *Cartomothrips* Stannard comprises four large black phlaeothripid species, all from Australia but with one also found in New Zealand (Mound and Walker 1982). Two of these species are common in south-eastern Australia and Tasmania and live, both as adults and larvae, in the dried seed capsules of various shrubby species of Myrtaceae, such as *Kunzea ericoides*, although the tissue they actually feed on has not been established.

Unfortunately, the biology of the type species of the genus, *C. browni* Stannard and its synonym *Treherniella niger* Moulton (Mound 1996), has remained unknown, these names being based on old material with no data other than the localities in Victoria and south-eastern New South Wales where they were found. However, two specimens of a thrips species provisionally identified as *C. browni* were collected several years ago in California (Arnaud 1983). Moreover, Mound and Marullo (1996) reported two further captures of this species in other parts of the world. The first of these was a single female taken on Mt Kilimanjaro in Tanzania and the second a male taken in a seed capsule of a *Eucalyptus* tree in the grounds of the Eucalyptus Museum at Rio Claro, SP, Brazil. These authors pointed out that it seemed likely that the thrips species had been distributed around the world by foresters in the seed capsules of *Eucalyptus* species. Records at the Eucalyptus Museum in Brazil indicate that seeds of more than 100 species of *Eucalyptus* were imported into that country from Australia in the early years of this century. Similar large numbers of seeds must have been moved to other countries around the world, including Tanzania and California.

Confirmation of the likelihood of this mode of transport has now become available from California, through the observations of Dr Eldon L. Reeves of the University of California at Riverside. Large numbers of *C. browni* adults and larvae were observed in the seed capsules of *Eucalyptus grandis* at the Santa Margarita Ecological Reserve, about 35 miles south of Riverside, in June 1997. The seed capsules were dry, partially to fully open and attached to fully healthy trees. Up to three adults were observed in a seed capsule and, when disturbed, these adults curved the tip of the abdomen over the head in the typical phlaeothripid defence posture. Adults were also found together with larvae and eggs, but from most of these capsules the seeds had already fallen. This suggests that the thrips feed on fungal hyphae within the capsules, rather than on the dry tissue of the seed capsule itself.

The adults are large and very dark brown and have exceptionally dark antennae, but the males are interesting because of their range in body size. The largest males are at least 4 mm long and have greatly enlarged fore femora and very stout fore tarsal teeth, whereas the smallest males are much more slender with weaker legs. Such differences in structure in the males of thrips species are now known to be associated with patterns of behaviour that involve male competition and fighting (Crespi and Mound 1997). The females of this species are monomorphic and, presumably, each male defends a particular seed capsule from intrusion by other males.

The mode of distribution of this thrips around the world is of some interest, but in Australia information is still needed both on its host range and geographical distribution, as well as on its precise feeding habits. This note is published in the hope that Australian forestry entomologists will be encouraged to find out more about this large, black and sexually polymorphic phlaeothripid species that has been exported so successfully from this country.

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